APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/458,322	12/10/1999	STEPHEN J. ZACK	533/198	8722

56015	7590	06/12/2006

PATTERSON & SHERIDAN, LLP/
SEDNA PATENT SERVICES, LLC
595 SHREWSBURY AVENUE
SUITE 100
SHREWSBURY, NJ 07702

EXAMINER
HUYNH, SON P

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/458,322	ZACK ET AL.
Office Action Summary	Examiner	Art Unit	
	Son P. Huynh	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 March 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>32-44</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>32-44</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 August 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 03/30/2006 have been fully considered but they are

not persuasive.

Applicant argues Mao and Wu fail to teach, disclose or suggest "predicting future

bandwidth availability based on the statistical multiplexing of the formatted content

stream; and selectively multiplexing formatted non-content data into said output stream

on a future bandwidth availability basis." (Page 7, paragraphs 2-4).

In response, this argument is respectfully traversed. Wu discloses the bandwidth

allocation is assigned to Opportunistic Data Processor (ODP) for providing formatted

opportunistic data **after** the bandwidth for encoded source data is calculated and

available/spare bandwidth is determined. The ODP provides formatted opportunistic

data for multiplexing only **after** the available/spare bandwidth is determined and

bandwidth allocation for formatted opportunistic data is received. The TSPs also provide

encoded source data for multiplexing **after** bandwidth allocations are assigned (col. 2,

lines 13-38; col. 4, lines 38-47, col. 5, lines 10-52, col. 6, lines 17-27). Therefore, the

claimed feature "predicting future bandwidth availability based on the statistical

multiplexing of the formatted content" is broadly met by **after** calculating the bandwidth

for encoded source data, predicting/assigning bandwidth allocation for formatted

opportunistic data to be multiplexed later into the stream; the claimed feature

"selectively multiplexing formatted non-content data into said output stream on a future

bandwidth availability basis" is broadly met by selectively multiplexing formatted

opportunistic data into the bandwidth allocation for later multiplexing the formatted

opportunistic data into the stream; wherein the encoded source data read on claimed

"formatted content", formatted opportunistic data read on claimed "formatted non-

content data"; determining/calculating available/spare bandwidth and providing

bandwidth allocation for later multiplexing formatted opportunistic data into the stream

after calculating bandwidth for encoded source data broadly read on predicting "future

bandwidth availability".

For the reason given above, rejections on claims 32-44 are maintained as discussed in

Final Rejection and repeatedly discussed below.

Claims 1-31 have been canceled.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 32-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Mao et al. (US 6,886,178) in view of Wu et al. (US 6,594,271).

Regarding claim 32, Mao teaches an information distribution system comprising server

equipment (programmer 24 and headend 10 – figure 1) for providing both content and

non-content data (video data and webpage and information data) to subscriber

equipment (set top 38, TV 40, remote control 36), the server equipment comprising:

        a multiplex switch (MPEG remux 14, proxy server 22, computer 32 – figure 1) for

multiplexing a plurality of formatted content streams from server modules to produce an

output stream that is adapted for transport via a communication channel (MEPG remux

14 in combination with proxy server and computer 32 for multiplexing a plurality of

encoded video streams from VTR, camera, external network via encoder 12 and

transcoder 20 to produce an output stream that is adapt for transport via communication

channel of network 34 – figure 1; col. 6, lines 15-59), wherein the multiplexing is further

for formatting non-content data (formatting HTML web pages and control map into

MPEG data packets – col. 25, lines 49-62; col. 6, line 60-col. 7, line 40, figure 2) and for

selectively multiplexing formatted non-content data into the output stream (computer 32

generates the control map, the HTML pages and the URLs for insertion into the industry

standard transport layer of MPEG-2 protocol – col. 6, lines 60-64). However, Mao does

not specifically disclose multiplexing of content streams is statistically performed, and

wherein the multiplexing of formatted non-content data is on a future bandwidth

availability basis that is predicted based on the multiplexing of the formatted content

streams.

Wu discloses multiplexing of content streams is statistically performed (based on TSP's

need parameters – col. 6, lines 10-27, and using statistical multiplexing algorithm run on

the PM 140...- Col. 4, lines 57-65), wherein the multiplexing of formatted non-content

data is on a future bandwidth availability basis that is predicted based on the

multiplexing of the formatted content streams (multiplexing of opportunistic data only

total bandwidth used for encoded video streams by all the TSP drops below threshold –

see including, but are not limited to, col. 4, lines 40-47; col. 5, lines 14-67; col. 6, line

17-26; col. 6, line 55-col. 46), wherein the claimed "future bandwidth availability" is

broadly met by bandwidth allocation for later multiplexing the formatted opportunistic

data after available/spare bandwidth is calculated/determined. Therefore, it would have

been obvious to one of ordinary skill in the art at the time the invention was made to

modify Mao to use the teaching as taught by Wu in order to maximize bandwidth

utilization and provide cost saving and minimizes disruption to the existing encoders in

the field (col. 3, lines 59-61).

Regarding claim 33, Mao in view of Wu teaches the system as discussed in the

rejection of claim 32. Mao further teaches the multiplex switch includes a buffer (i.e.

proxy 22) for storing non-content data (col. 25, lines 45-48) and a switch controller (i.e.

computer 32) for insertion of control map and web pages into the industry standard

transport layer of the MPEG-2 protocol (col. 6, lines 60-64). Wu also discloses buffer

162 for buffering the opportunistic data (figure 1) and a switch controller (QLP 130) for

determining a bandwidth utilization level of the multiplex switch, the switch controller

further for causing at least a portion of the non-content data in the buffer to be

multiplexed into the output stream when the bandwidth utilization level falls below a

threshold utilization bandwidth level (the QLP 130 causes the opportunistic data from

buffer 162 to be multiplexed into the stream when the bandwidth utilization level drops

below a threshold utilization bandwidth level – including, but are not limited to, col. 4,

lines 40-47; col. 5, lines 14-67; col. 6, line 17-26; col. 6, line 55-col. 46). Therefore, it

would have been obvious to one of ordinary skill in the art at the time the invention was

made to modify Mao to use the teaching as taught by Wu in order to maximize

bandwidth utilization and provide cost saving and minimizes disruption to the existing

encoders in the field (col. 3, lines 59-61).

Regarding claim 34, Wu further discloses the threshold bandwidth utilization level

comprises a utilization level sufficient to process a single time extent (i.e. service

interval for a portion of opportunistic data). Wu further discloses digital audio and video

data or any other digital data in MPEG-2 standard – col. 4, lines 6-26, lines 37-40).

Thus, the content streams are inherently divided into a plurality of respective time

extents (time interval corresponds to a portion/segment of the digital data).

Regarding claim 35, Wu further discloses the content streams contain digital data in

MPEG-2 standard (col. 4, lines 6-26 and lines 37-40). Thus, the content streams is

inherently divided into a plurality of respect time extents (time interval associated with

each segment/portion of the MPEG-2 stream). Wu further discloses each TSP, including

ODP, send statistical information tot he QLP 130, including e.g., a "need parameter"

that indicates the bandwidth need of the TSP..., the QLP calculates the total bandwidth

and allocates the available bandwidth to each individual TSP in proportion to the TSP's

need parameter. Each TSP sends packets to the multiplexer according to the bandwidth

allocation (col. 5, line 10-col. 6, line 27). Since the need parameter and amount of

bandwidth allocated to the TSP and the ODP are provided, the predetermined number

of time extents (number of packets which associated with a time interval) are

multiplexed into the output stream (for example, no packets of opportunistic data is

multiplexed into the stream if bandwidth allocated for ODP is zero – col. 6, lines 17-26).

Regarding claim 36, Mao further teaches the non-content data comprises control data

(i.e. control information in control map) and non-control data (i.e. web pages, URL), and

the multiplex switch preferentially multiplexes the non-content control data (figures 1-4,

7; col. 6, lines 26-64; col. 7, lines 1-67).

Regarding claim 37, Mao further teaches the non-content data comprises control data

(i.e. control information in control map) and non-control data (i.e., web page, URL), and

the multiplex switch preferentially multiplexes the control data (figures 1-4, 7; col. 6,

lines 26-64; col. 7, lines 1-67).

Regarding claim 38, Mao further teaches the content data includes MPEG data (col. 6,

lines 25-67).

Regarding claim 39, Mao further teaches the non-content data includes Internet protocol

data (HTML web page, URL, figures 1-5, col. 6, lines 26-64, col. 7, lines 1-67).

Regarding claim 40, the limitations of the method as claimed correspond to the

limitations of the system as claimed in claim 32 and are analyzed as discussed with

respect to the rejection of claim 32.

Regarding claim 41, Wu further teaches storing non-content data until bandwidth

availability enables multiplexing of the stored non-content data (storing opportunistic

data in buffer 162 until TSPs do not need all available bandwidth of the transport stream

– figure 1; col. 5, lines 1-19).

Regarding claims 42-44, the limitations as claimed correspond to the limitations as

claimed in claims 35, 38-39, and are analyzed as discussed with respect to the rejection

of claims 35, 38-39.

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Eldering et al. (US 6,820,277) discloses determining future available bandwidth and

auctioning the future available bandwidth to advertisers (col. 7, line 64-col. 9, line 17).

        Krebs (US 5,557,320) discloses the network control and traffic information

determine optimal periods of future bandwidth availability (col. 9, lines 40-45).

        Mogul et al. (US 6,243,761) discloses predict future bandwidth availability or

bandwidth availability in near future (col. 6, lines 50-60).

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

        A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son P. Huynh whose telephone number is 571-272-7295. The examiner can normally be reached on 9:00 - 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher S. Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Son P. Huynh
June 1, 2006

CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600